

and should not fall in a straight line. Next, draw the maze design on the printed map by hand, making sure to stay well within the field boundary. When complete, scan the finished design and save it in a file format that can be read by your mapping software. Finally, import the image file of the maze design and register it (assign geographic coordinates) in the GIS software so it can be used as a map (Figure 2). The software should have instructions for this process.



Figure 2. Image added within the field boundaries.

TRANSFER THE DESIGN TO THE FIELD

Use the portable computer and GPS receiver to transfer the maze design from the map to the field itself. Choose a GPS receiver with suitable accuracy and connect it to the portable computer. With the GPS engaged, the maze design can be viewed as a map and your location displayed. Select a part of the design as the starting point for the mapping, and guide yourself to that spot with the GPS receiver and computer. Carefully locate the position to ensure accuracy for the layout. You may wish to pause for a few seconds to be sure you are at the correct location. Mark the point in the field with a flag or stake from a supply of consecutively numbered markers. The numbers will be useful for later reference. (Also, if the maze is complicated, having different colored flags or different number sequences for different elements of the design will be helpful.) Once the first point is set, move to the next point and repeat the process. Continue until the entire maze design or part of the design has been transferred to the field. At this time you will have what looks like a “connect the dot” picture of your design. For

example, in Figure 2, an outline of the North Carolina State University “Strutting Wolf” design can be seen. Each star along the outline represents a point determined and marked with the GPS receiver and GIS software.

CUTTING THE MAZE

Once the design has been marked on the field, the crop can be cut with a mower or other implement. Choose a starting point. For example, you may wish to start cutting from the edge of the field to the first or closest marker to create an entrance to the maze. Then cut from marker to marker in the order they appear in the design. It is very helpful to have each marker numbered in sequence of cut. It is also helpful to have a spotter in the field to guide you to the next marker in sequence. As you cut from point to point, the maze design will take shape in the field, again, like “connecting the dots” on a large drawing. When cutting from marker to marker, the mower can pass to the side of the marker or the marker can be in the center of the swath. It is important to use the same approach consistently to ensure the design is cut correctly.

If the design requires cutting circles, an effective approach is to locate the center of the circle with the GPS receiver. Have the GPS operator stay at that point, and have someone measure the radius of the circle with a tape measure or marked cord. By holding the tape or cord taut, a circle can be drawn and marked around the GPS operator’s position.

In some cases, the pattern can be cut as the GPS operator lays out the design. For this procedure, the GPS operator locates his or her starting point, then finds a second key point on the design (an intersection, points in a curve, a change of direction) and marks it on the field. The mower operator immediately cuts a path from the start to that point. The GPS operator then locates the next point. Now the mower operator cuts from the previous point to the new point, and so on. The maze takes shape immediately without the need to mark dozens or hundreds of points to cut later. However, this process leaves very little room for error. Once an incorrect cut is made, it is part of the pattern, and you may not be able to undo the error or hide it in the design.

When ready to cut the maze, choose a mower that can handle the height of the crop easily. A maze can be created as soon as the crop is a few inches tall, and cuts can continue over the summer until it reaches its full height. The optimum time for the first cut is when the crop is just tall enough to show whether you have a good stand.